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UNITÀ DI GESTIONE
MOTORIZZAZIONE E SICUREZZA DEL TRASPORTO TERRESTRE
- MOT 2 -

Rome, 4/7/2000

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IHRA Working Group on Advanced Offset Frontal Crash Protection.

Please find here enclosed the minutes of the eigth meeting of the Working Group, held in London on the 16th of June 2000.

Sincerely yours,

Claudio Lomonaco

INTERNATIONAL HARMONIZED RESEARCH AGENDA (I.H.R.A.)

Rome, 4/7/2000

STATUS REPORT ON THE ADVANCED OFFSET FRONTAL CRASH PROTECTION GROUP
(Based on the results of the meeting held in Madrid on 16th June 2000)

Participants: C. Lomonaco (Chairman, Ministry of Transport of Italy), R. Lowne (EEVC), A. Lie (EEVC), A Hobbs (IHRA Compatibility), P O'Reilly (IHRA, Compatibility), T. Hollowell (NHTSA), P. Fay (ACEA/OICA), K.Oki (Jama), K.Mizuno(Japan MOT), H.Ohmae (JARI), K.Seyer (Australian DOT), C. Newland (Australian DOT), D.Dalmotas (Crashworthiness Research Division), E. Gianotti (Secretary of the Group).

DISCUSSION ON THE AGENDA OF THE MEETING

1. Type of barrier (1st step – 2nd step)

Chairman: focused the attention of the group on document AFC 28, and stressed the need to get any conclusion concerning a common approach on the subject.

NHTSA: informed the group about the advanced Air Bag rule on FMVSS 208 and, as a follow up, about the enhanced benefits on Crash Protection Tests.
At this aim the following achievements have been synthetized by the agency:

Two phases:

Phase 1
- Emphasis on minimizing risks
- Enhancing Benefits – Return to Barrier Test
- Belted 30 MPH; Unbelted 25 MPH

By 2004 first phase-in 35%
2005 2nd phase-in 65%
2006 last phase-in 100%

Phase 2
- Enhancing benefits for Belted Occupants
- Belted 35 MPH 50 percentile male
- Belted 35 MPH 5 percentile female (Future Proposal)

By 2008 first phase-in 35%
2009 2nd phase-in 65%
2010 last phase-in 100%

As crash test protocol, these configuration has been devised:

	Rigid Barrier		***Offset***
	Unbelted	***Belted***	*Belted*
Mid Sized Adult	± 30°	0°	
Short StatureAdult	0°	0°	25 MPH 40% Overlap

EEVC
Reported that in the next revision of Frontal Impact Directive no significant modification on the barrier will be introduced. Just recommendation and tolerances concerning spoil thickness have been devised in the draft amendment.

2. Impact speed

NHTSA
Specified that no test below 20 mph has been fixed for the time being and scheduled , even though, in the future activities unbelted Barrier Tests at various speeds would be conducted, in order to monitor the effectiveness of redesigned and advanced Air-Bags.

EEVC
With regard to the increase of speed, EEVC maintain his concerns for compatibility. A 65 km/h test speed would lead to have larger cars stiffer. Anyway EURO NCAP tests have different response.
Large cars have not changed, while smaller cars are becoming stiffer (Polo case) and are becoming closer to larger cars in their performances. WG16 have decided in another way, namely a 60km/h test speed is confirmed.

Conclusion
The chairman invited the members to revise doc.AFC 28b, according to their statements.
At this aim the document was rearranged by mr. Hollowell and distributed with this minute.

3. Performance criteria

Canada
Informed about the intention to harmonize biomechanical limits with NHTSA, such as 50msec for HIC. Anyway likely the present thorax deflection of 50 mm will be reduced to 41 mm, for test against rigid wall, in the case of the 5% female. This changes would be reported in the next NPRM.

USA
Reported the final limits for HIC, CHEST, FEMUR and NECK criteria.
These are reported into document IHRA/AFC 30 distributed by mr. Hollowell after the meeting and attached to this minute.

Conclusion
According to the news in the new National Body Regulation the chairman asked to the group to revise document IHRA/AFC 22C, concerning Injury Criteria Requirement by Body Region and Injury Type. This has been update by the group and distributed by mr. Hollowell after the meeting and attached to this minute.

4. Compatibility issues (due to the different approach of crash tests of Europe and US)

Mr. Hobbs
As far as compatibility concerns, UTAC by WG 16 suggested a stiffer progressive barrier to avoid shear, but for the time being no position was taken about that. No action have been taken with regard to the mass effects. Mr. Hobbs remarked the importance to improve the barrier in the frontal impacts. Hobbs added that discussion are keep going on load cells on the barrier.

5. Comparative analyses method (concerning the Trolley-based Frontal Offset Impact Test Procedure)

NHTSA
Confirmed that studies are in progress on this item. The agency is still working to better the movable barrier test procedure.

Conclusion of the meeting

Mr.Lomonaco remarked that a test report on the activity of the group should be finalized by the next meeting. This was tentatively scheduled on 15 November 2000 in London by DETR.
Anyway a confirmation will be delivered within next weeks.

List of documents distributed so far .

- **IHRA/afc-1-Development of a Frontal Offset Crash Test Procedure (B. Park,R. Morgan, J. Lowrie)**
- **IHRA/afc-1a-Occupant Injury Protection Values for Frontal Impact Based on Dummy Measurements.**
- **IHRA/afc-2-NHTSA's Development of a Frontal Offset Test Procedure Based on Crash Data (S.L.Stucki).**
- **IHRA/afc-3-Report of IHRA Activities WG on Advanced Offset Frontal Protection (R. Lowne).**
- **IHRA/afc-4-EURO NCAP crash test programme**
- **IHRA/afc-5-Road traffic Accident in JAPAN.**
- **IHRA/afc-6-AIR-BAG Aggressiveness Study (D.J. Dalmotas).**
- **IHRA/afc-7-Proposed Test Matrix for 1998 Frontal Offset Program – Office of Crashworthiness Standards (B.Park, R.Morgan & J.Lowrie)**
- **IHRA/AFC-8-Frontal impact research (K. Seyer).**
- **IHRA/AFC-9-Report on EEVC Activities in Support of IHRA Tasks (R. Lowne)**
- **IHRA/AFC-9a-Trolley Mass for a Mobile Barrier - Car Frontal Offset Impact Test (R. Lowne).**
- **IHRA/AFC-9b-Requirements for Selecting a Frontal Impact Deformable Barrier Face (C.A.Hobbs)**
- **IHRA/AFC-10-Determination of Frontal Offset Test Conditions based on crash data (S. Stucki, W.T.Hollowell)**
- **IHRA/AFC-11- Frontal Offset Crash Test study using 50th percentile male and 5th percentile female dummies (B.T.Park, R.M.Morgan, J.R.Hackney, J. Lee, S. Stucki, J. Lowrie).**
- **IHRA/AFC-11 A (B.T.Park, R.M.Morgan, J.R.Hackney, J. Lee, S. Stucki, J. Lowrie).**
- **IHRA/AFC-12- Offset test procedure development and comparison (C. L. Ragland)**
- **IHRA/AFC-13 Review of Potential Test Procedures for FMVSS No. 208 (S. Stucki, W.T. Hollowell, H.C.Gabler, S. Summers, J.R.Hackney)**
- **IHRA/AFC-14 Development of Improved Injury Criteria for the Assessment of Advanced Automotive Restraint Systems (M.Kleinberger, E.Sun, R. Eppinger, S.Kuppa, R.Saul).**
- **IHRA/AFC-15 Real Conditions of Japanese Road Traffic and Traffic Accident (K. Oki)**
- **IHRA/AFC-16 UN and EU Vehicle Category Definitions**
- **IHRA/AFC-17 Improved Frontal Crash Protection: Passenger Cars and LTV'S**
- **IHRA/AFC-18 Accident Analyses for the Review of the Frontal and Side Impact Directives**
- **IHRA/AFC-19 Australia study on vehicle Nose-Dive.**
- **IHRA/AFC-20 Frontal Offset Crash Test Study Using the 50^{th} Percentile Male and 5^{th} Percentile Female Dummies**
- **IHRA/AFC-21 Deflection Characteristics of EEVC and ADAC Frontal impact Barriers**
- **IHRA/AFC-22 Injury Assessment R Lowne [EEVC]**
- **IHRA/AFC-22a Revised Injury Assessment (Meeting in Delft) R. Lowne [EEVC]**
- **IHRA/AFC-22b Revised Injury Assessment (Meeting in Madrid) R. Lowne [EEVC]**
- **IHRA/AFC-22c Revised Injury Assessment (Meeting in London)**
- **IHRA/AFC-23 Standard Seating Position for 50^{th} Percentile Male Hybrid III (Adrian Lund)**
- **IHRA/AFC-24 Frame and Body characteristics of motor vehicles for carriage of goods (Japan Type Approval Handbook – Safety Regulation).**

- **IHRA/AFC 25 IHRA compatibility group – Main points from discussion of MDB at meeting in S.Diego (28 and 29 ottobre 1999)**
- **IHRA/AFC 26 Fixed vv Mobile Deformable Barrier**
- **IHRA/AFC 27 A new generation of seat belt reminder systems**
- **IHRA/AFC 28 Frontal impact test configurations – Potential common approach phase I.**
- **IHRA/AFC 28a Revised Frontal impact test configurations (Meeting in Madrid) – Potential common approach phase I.**
- **IHRA/AFC 28b Revised Frontal impact test configurations (Meeting in London) – Potential common approach phase I.**
- **IHRA/AFC 29 Response to review of Potential Test Procedures for FMVSS No.208, sept.1998 by Office of Vehicle Safety Research, NHTSA. (Distributed by e-mail after the meeting).**
- **IHRA/AFC 30 Injury Criteria for FMVSS No.208 NHTSA**
- **IHRA/AFC 31 Report to EC DG Enterprise Regarding the Revision of the Frontal and Side Impact Directives**